

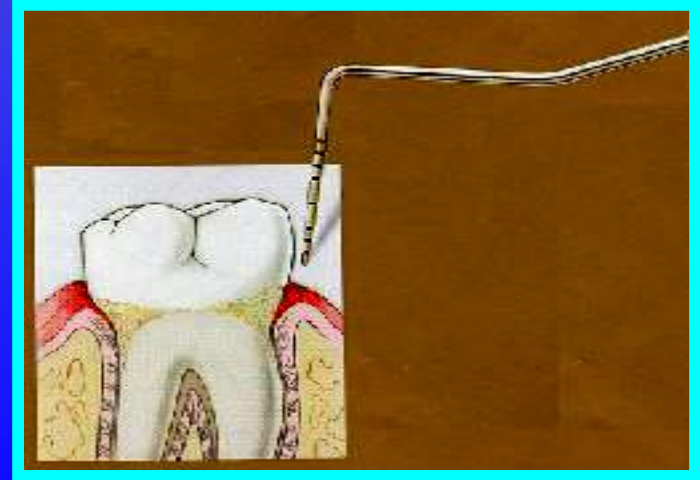
II- Measuring Periodontitis



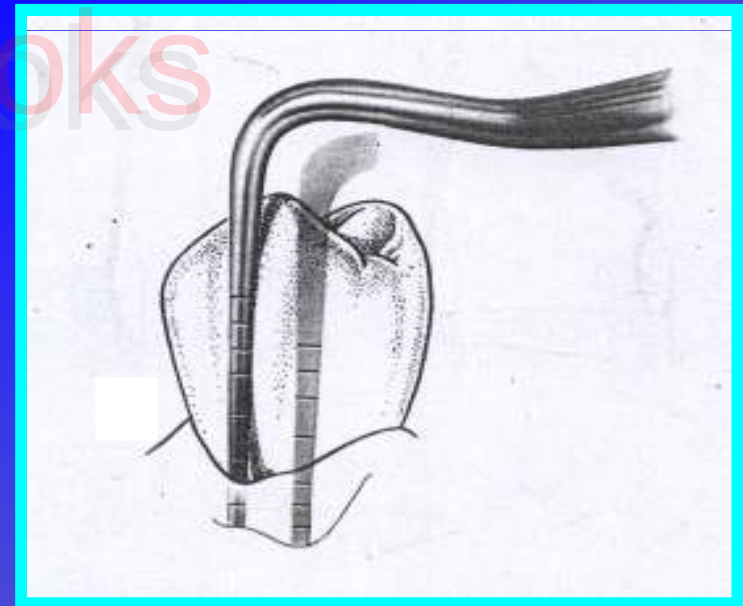
Periodontal tissues should be examined for the presence of :

- **1- Periodontal pocket.**
- **2- Clinical attachment loss.**
- **3- Gingival recession & furcation involvement.**
- **4- Bleeding & suppuration.**
- **5- Tooth mobility**
- **6- Bone loss.**

- A *thin periodontal probe* should be used during periodontal exam. with gentle pressure.



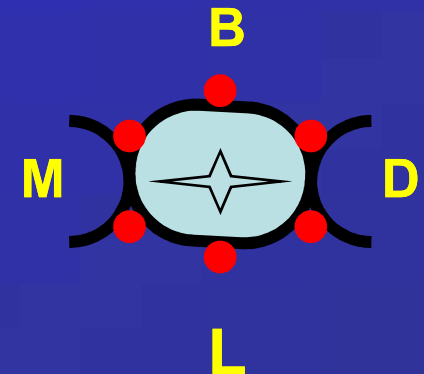
- Periodontal probe should be “*walked*” around the entire *circumference* of each tooth.



- *Probing is done on **all surfaces** of **every tooth** in the dentition.*

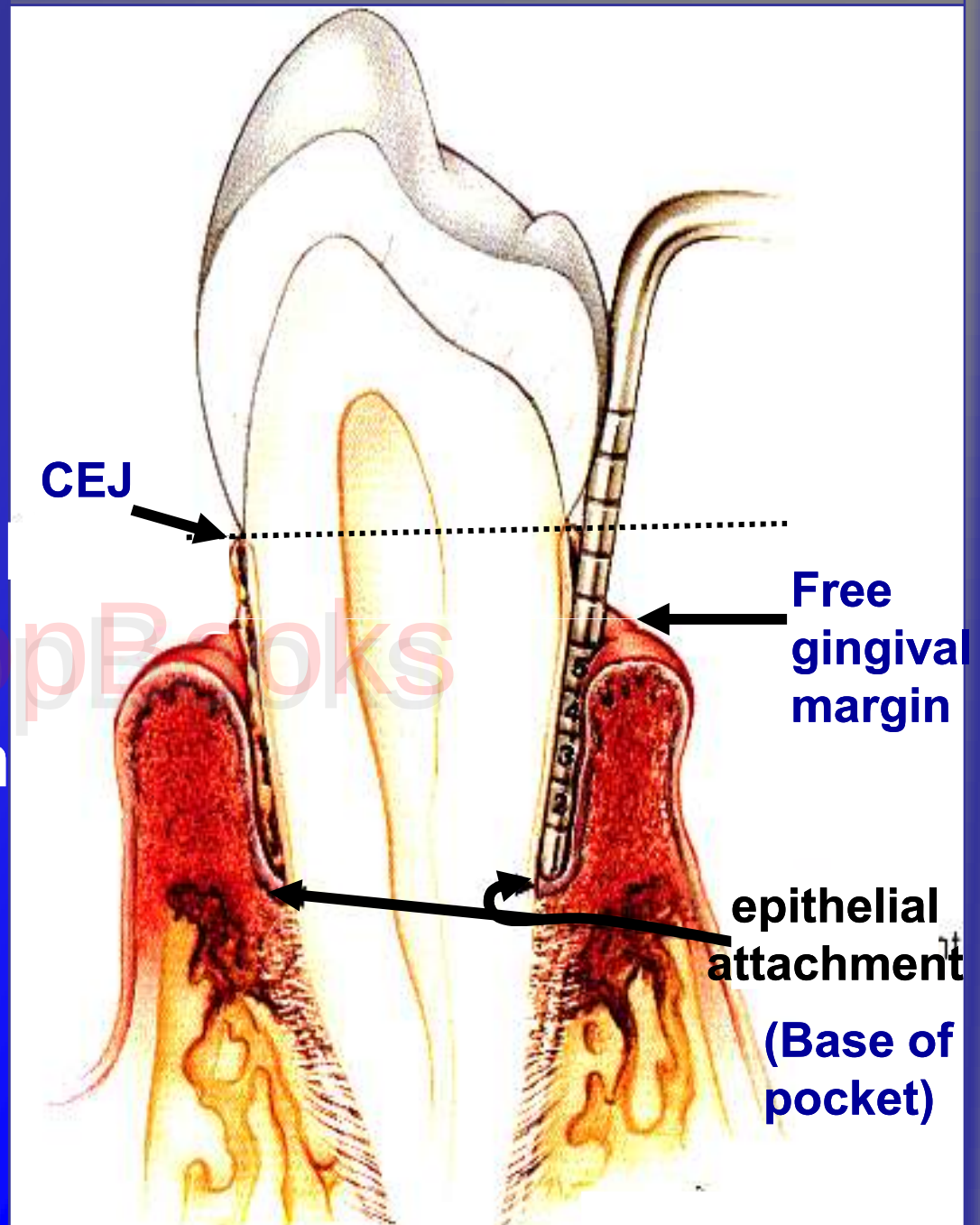


- *Pocket depth & attachment level should be recorded at **6 locations**; **buccal.**, **lingual.**, **mesiobucc.**, **mesioling.**, **distobucc.**, **distoling.***

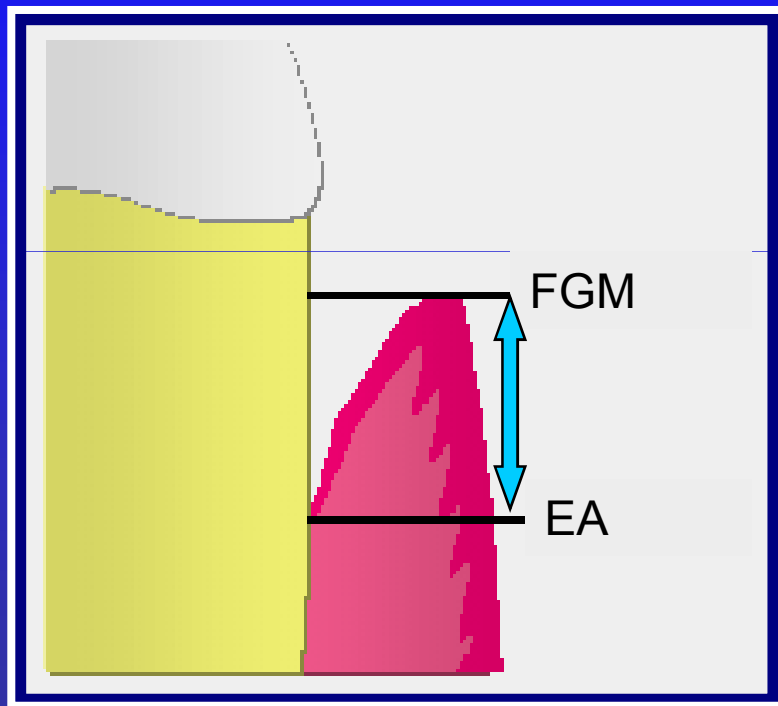


Pocket depth =
distance from free
gingival margin to
base of pocket.

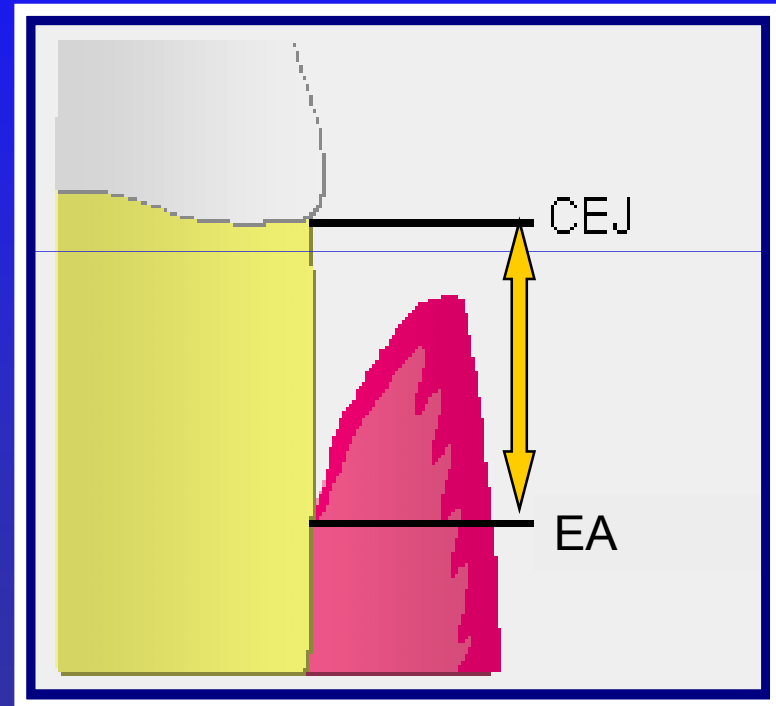
**Clinical attachment
loss =** distance from
cemento -enamel
junction to base
of pocket.



Pocket depth



Loss of attachment



Indices that measure periodontitis :

- 1-Russell periodontal index.
- 2- Periodontal disease index.
- 3-Community periodontal index.
- 4- Loss of attachment index.

RUSSELL'S PERIODONTAL INDEX (*PI*)

- ★ Periodontal index (PI) is described by *Russell* in (*1956*).
- ★ It was the **most widely used** periodontal index for many years then (in the 60s).
- ★ It was seen as an ideal field index and used for *epidemiological surveys*
Because it needs less time, less equipments, & its criteria is clear.

PI is a composite index

```
graph TD; A[PI is a composite index] --> B[Reversible]; A --> C[Irreversible]; B --> D[As it measures gingivitis]; C --> E[As it measures destructive periodontal disease];
```

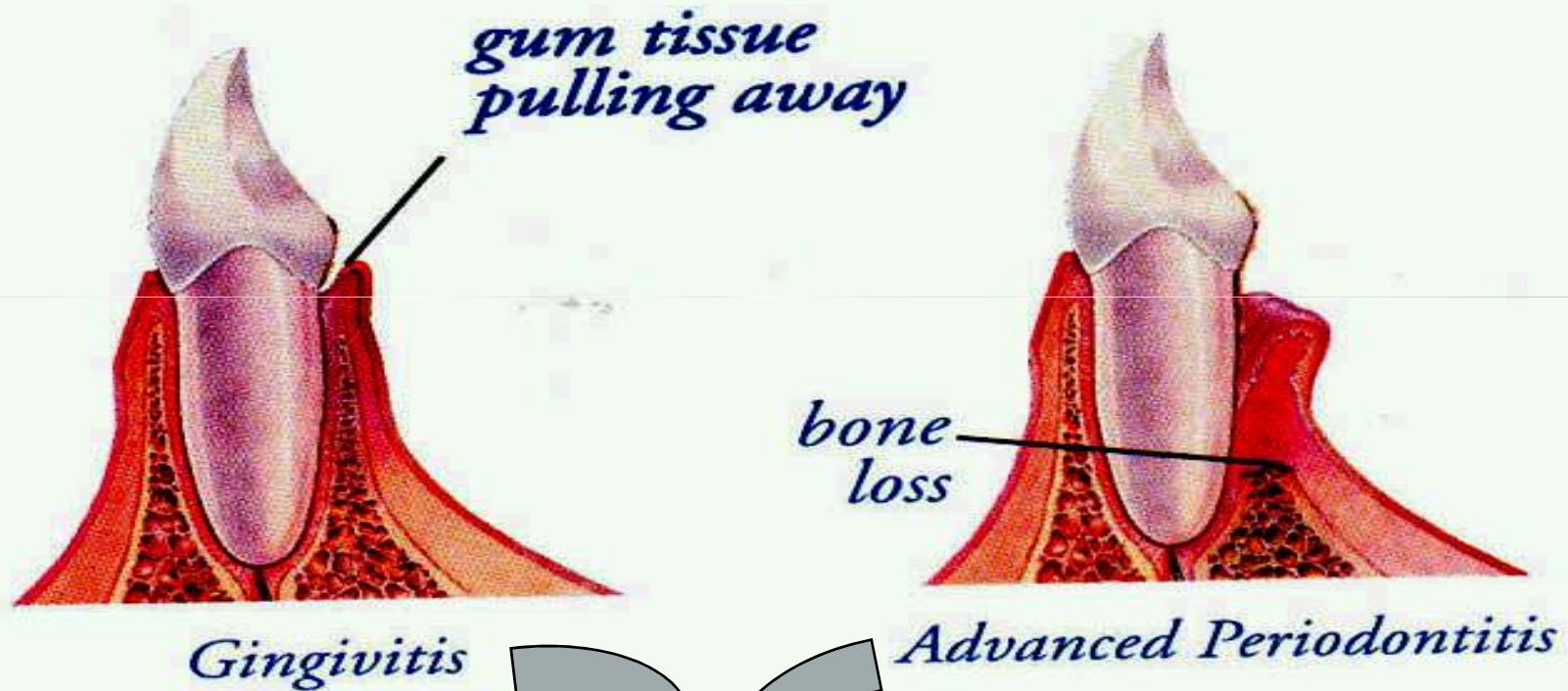
Reversible

**As it measures
gingivitis**

Irreversible

**As it measures
destructive
periodontal
disease**

Composite index measures both :



**Reversible
stage**

&

**Irreversible
stage**

Score	Criteria For the Periodontal index
0	<u>Negative</u> : There is neither overt inflammation in the investing tissues nor loss of function due to destruction of supporting tissue.
1	<u>Mild gingivitis</u> : There is an overt area of inflammation in the free gingivae, but the area does not circumscribe the tooth.
2	<u>Gingivitis</u> : Inflammation completely circumscribes the tooth, but there is no apparent break epithelial attachment .

Criteria of PI (cont.)

Score

6

Gingivitis with pocket formation:

The epithelial attachment has been broken and there is a pocket. There is no interference with normal masticatory function, the tooth is firm in its socket and has not drifted.

8

Advanced destruction with loss of masticatory function:

The tooth may be loose; may have drifted; may sound dull on percussion with an instrument; and may be depressible in its socket.

Scoring of PI :

- ② Each ***erupted*** tooth is examined & given a score between **0 to 8**
- ② ***PI score for a person*** =
.....
$$\frac{\text{sum of scores of examined teeth}}{\text{number of examined teeth}}$$
- ② ***Mean PI score for a group*** =
.....
$$\frac{\text{sum of person's scores}}{\text{number of persons examined}}$$

- **Russell** chose the scoring values (0,1,2,6,8) **in order to** relate the stages of the disease scored in a survey to the clinical conditions observed.
- **Low scores** are given for gingival inflammation, & **much higher scores** when the alveolar bone has been destroyed. Thus the **jump** from 2 to 6 in the scale.

- An additional **score 4** which is *not* used in the field study. It is **an x-ray criteria** used only for individual clinical examination.
- **Score 4** = Early notchlike resorption of the alveolar crest.

The PI has some limitations :

- It does not discriminate between moderate and severe gingivitis .**
- It does not measure loss of attachment; graded all pockets of 3 mm or more equally.**
- Scored gingivitis & periodontitis on the same weighted scale.**

IV- Measuring Periodontal Treatment Needs



Community periodontal index of treatment needs (CPITN)

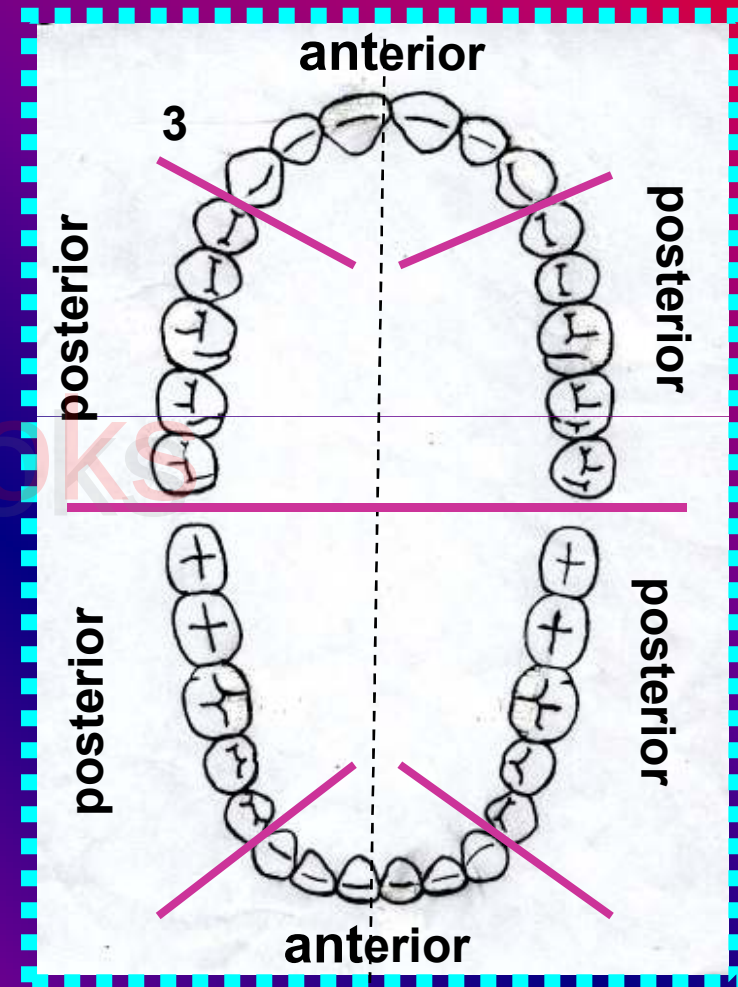
- ✿ **CPITN** was developed after extensive field work by **WHO & FDI** (International Dental Federation).
- ✿ This index is designed for use in **epidemiological surveys** because it permits rapid examination of large population groups.
- ✿ **CPITN** is used to determine **periodontal conditions** as well as **periodontal treatment needs**

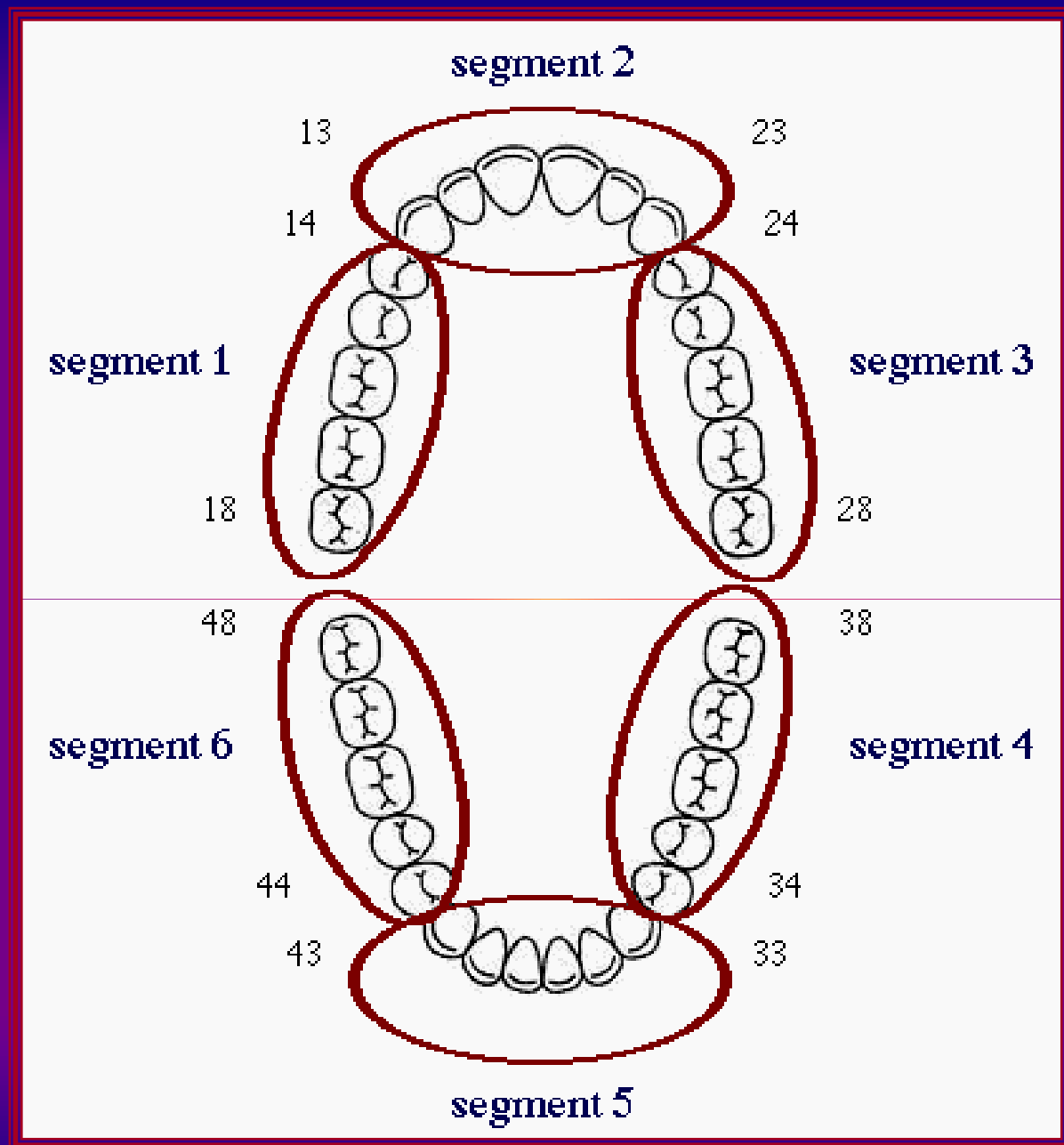
Method of examination for CPITN

- This index is recorded for six segments (*sextants*)
- in each mouth:
one anterior & two posterior
for both upper & lower jaws.

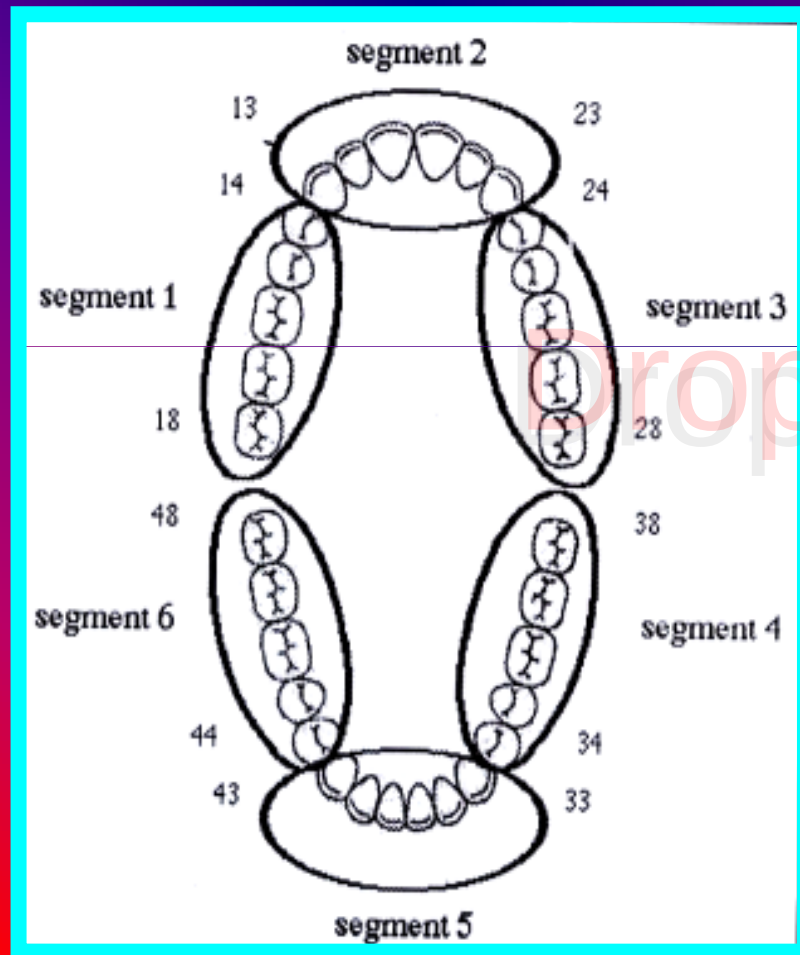
Anterior segment: from canine to canine.

Posterior segment: from 1st premolar to last molar.





The sextants according to two-digit numbering:



18-14	13-23	24-28
48-44	43-33	34-38

● A sextant should be examined **ONLY** if there are **TWO OR MORE** teeth present & **NOT** indicated for extraction.

● If there are *not at least two* functioning teeth in a sextant, this sextant should be **excluded** (**x**)



Index teeth are selected from sextants.



For adults aged 20 years & over 10 index teeth are examined:

7	6		1		6	7
7	6		1		6	7

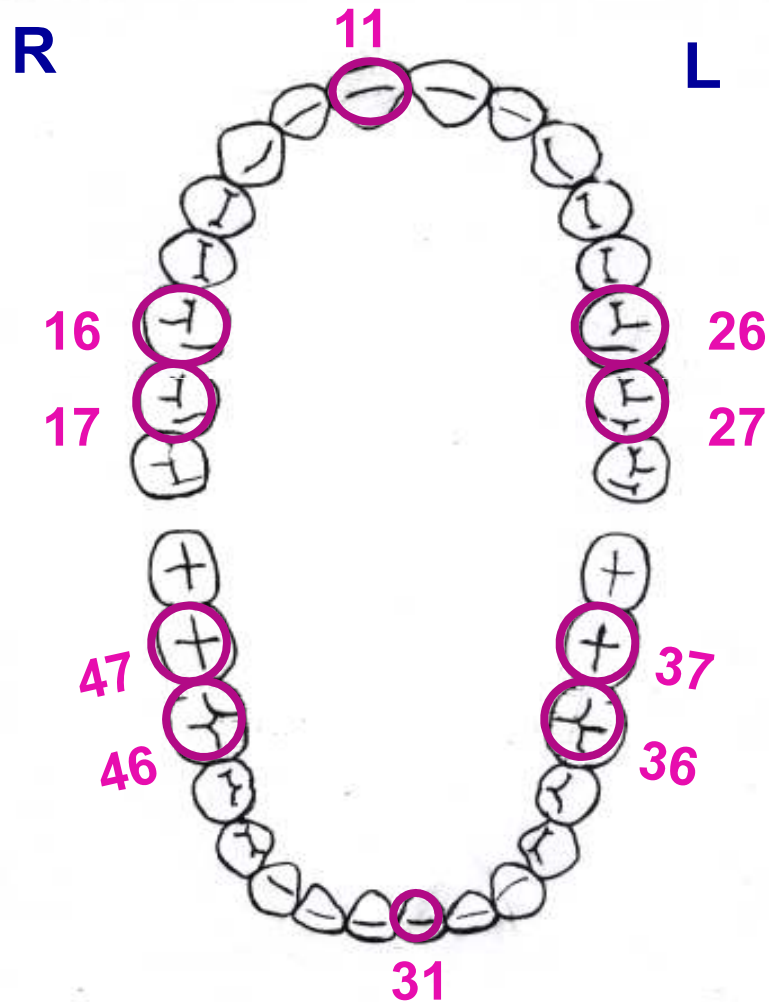


For young people aged up to 19 years, only 6 teeth are examined:

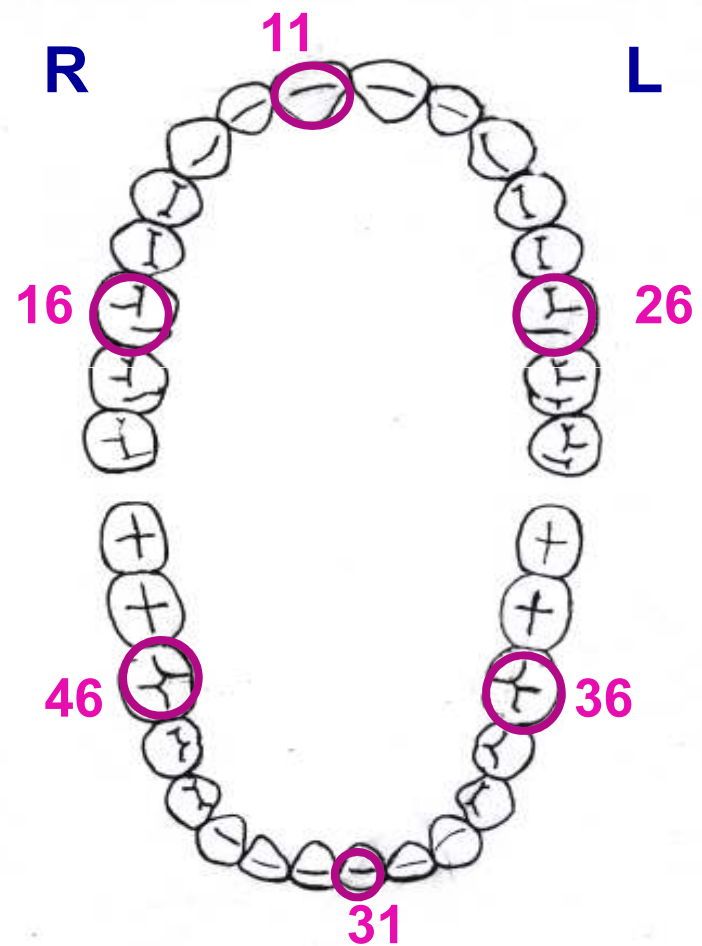
6	1		6	6
6	1		6	6

INDEX TEETH

For ≥ 20 y.



For ≤ 19 y.





Each index tooth should be examined & given a score using a special periodontal probe developed by *WHO*.



If no index teeth is present in a sextant, **all the remaining** teeth in that sextant are examined.

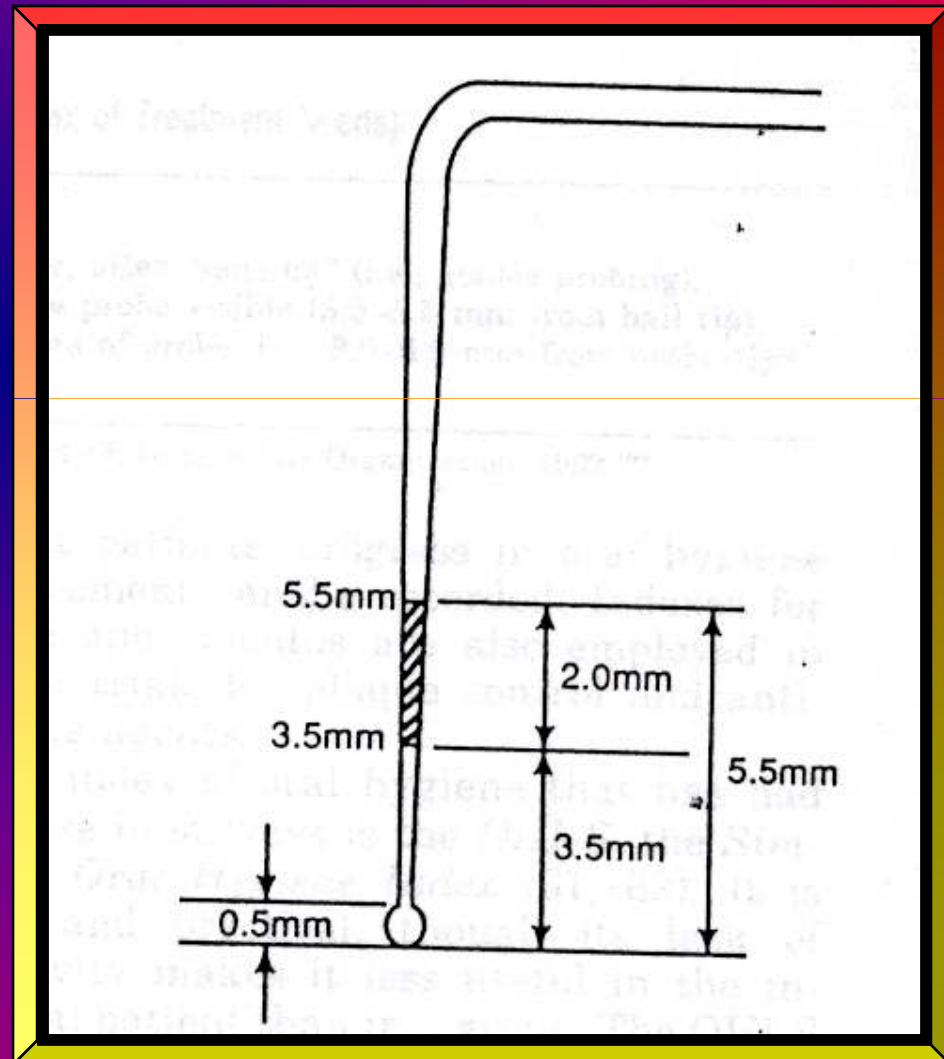
The WHO Periodontal Probe

- The probe has:

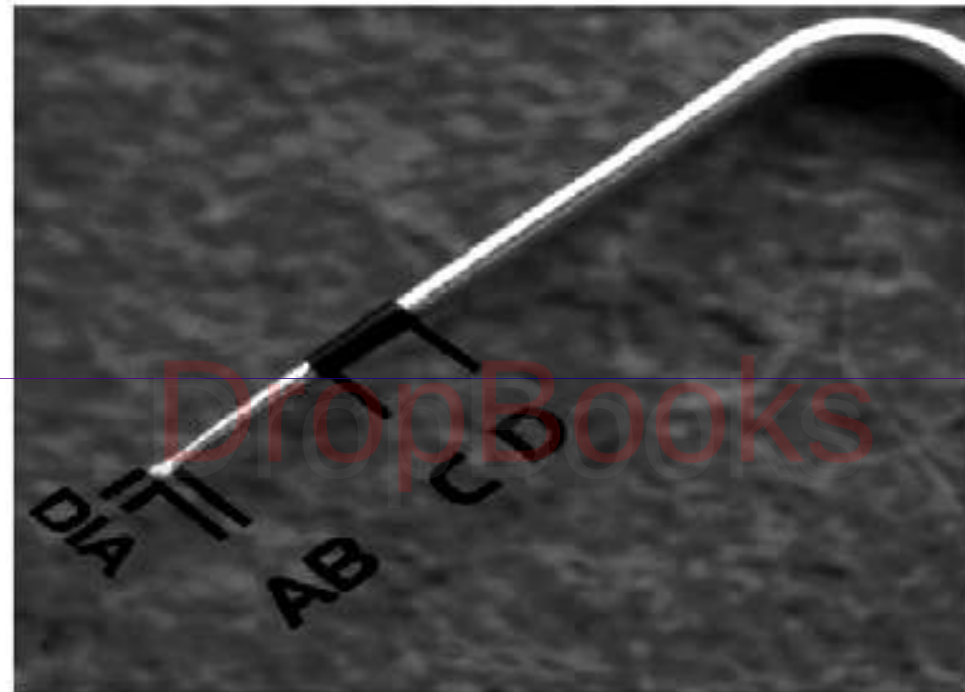
▲ Very light weight

▲ 0.5 mm ball tip

▲ Black band between 3.5 mm & 5.5 mm from the ball tip.



WHO Periodontal (CPI) Probe



WHO-621 Trinity probe. DIA: Transversal sphere diameter. AB: Longitudinal sphere diameter. AC: Beginning of colored band. AD: Ending of colored band.

Scoring of CPITN:

The highest score (worst condition) observed within each sextant is recorded using the following **criteria**:

0= Healthy.

1= Bleeding observed after probing.

2= Calculus detected (supra- or sub-gingival) but all the black band visible.

3=Shallow pocket 4-5mm ;gingival within the black band on the probe.

4=Deep pocket 6 mm or more; black band not visible.



SCORE 0:HEALTHY



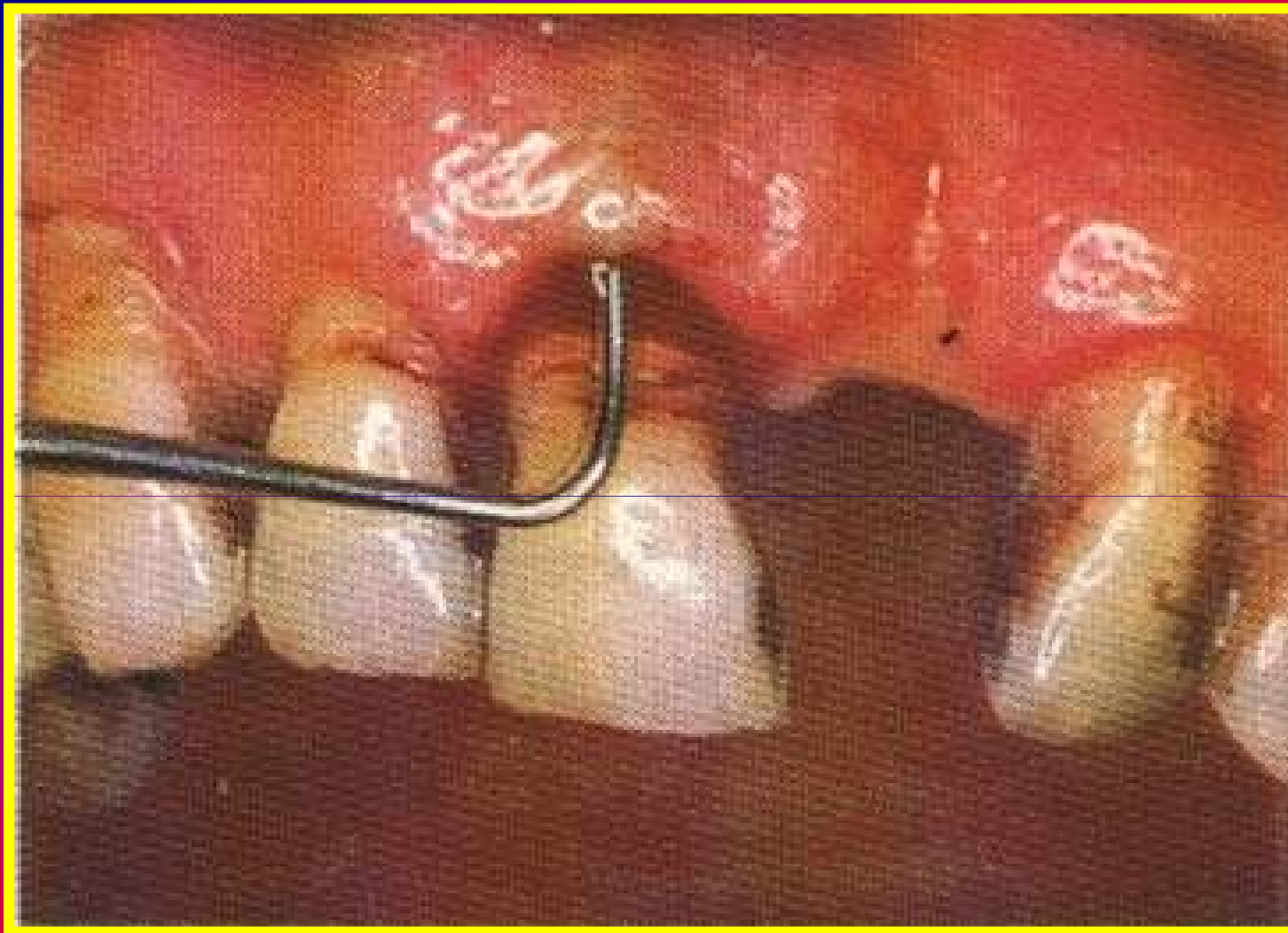
SCORE1:BLEEDING



SCORE 2: CALCULUS



SCORE 3:SHALLOW POCKET



SCORE 4:DEEP POCKET

Criteria for treatment needs:

0. =no treatment needed (score 0).

I. = Oral hygiene instruction (score 1).

II. = I +professional scaling (score 2&3).

III. =I +II + complex treatment (score 4).

COMMUNITY PERIODONTAL INDEX (CPI)

- It is the same *CPITN* index except there is no scoring for treatment needs .
- The index itself (*CPITN*) is referred to as *CPI* by WHO in its handbook on Pathfinder surveys , the 4th edition (1997).
- This handbook also includes loss of periodontal attachment (*LA*) measurements.

This index is based on the fact that:

- When there is **gingival recession**, i.e. CEJ is visible, probing pocket depth is invalid & unreliable.

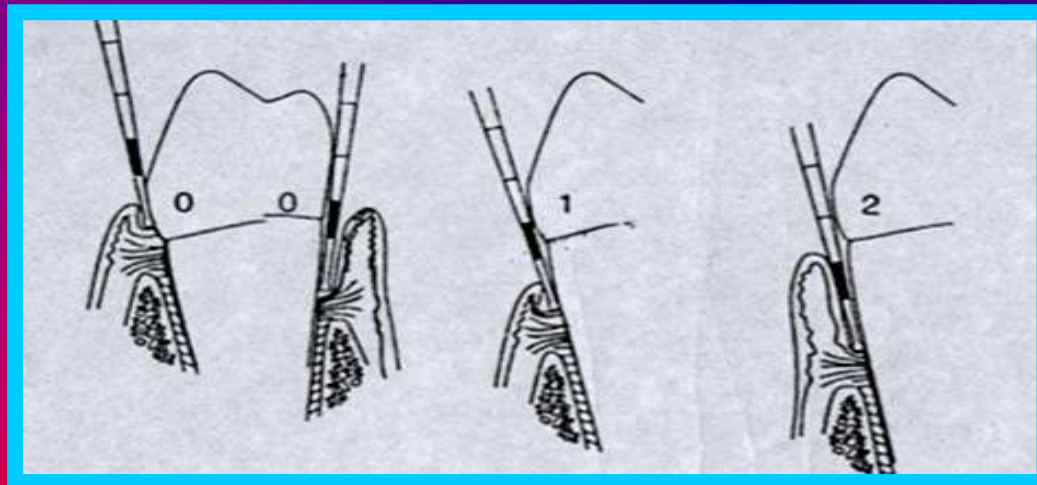


In this case pocket depth does not indicate the presence of perio. disease.& **LA SHOULD BE RECORDED.**

- ☀ **LA is recorded** in each sextant immediately after recording the CPI score .
- ☀ **LA should not** be recorded when CEJ is not visible and the highest CPI score for a sextant is less than 4.
- ☀ **LA should not** be recorded for children **under the age of 15.**

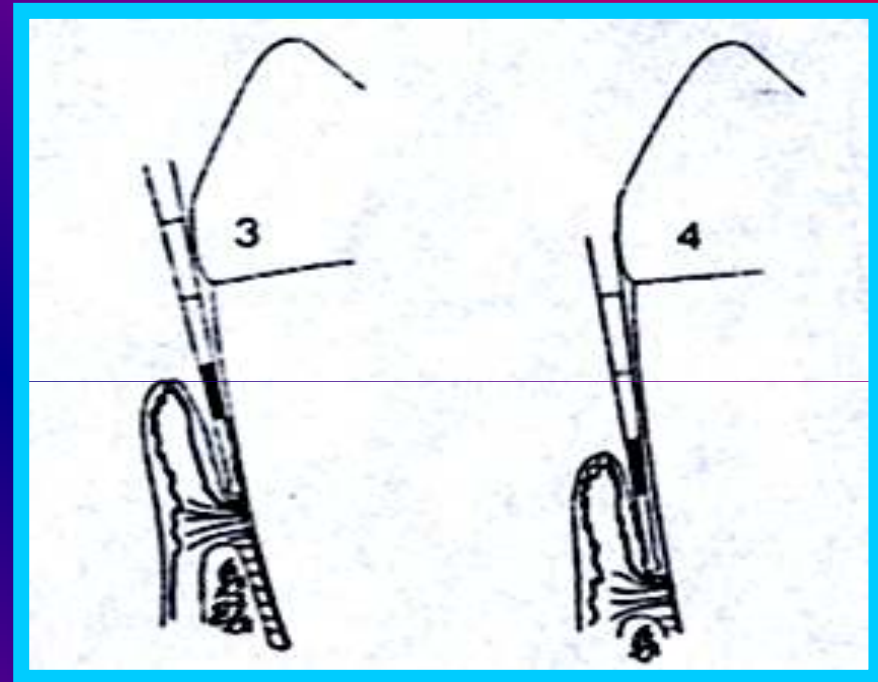
The extent of loss of attachment is recorded using the following codes:

- 0-** LA 0-3 (CEJ) not visible & CPI score < 4.
- 1-** LA 4-5 mm (CEJ within the black band).
- 2-** LA 6-8 mm (CEJ between the upper limit of the black band & the 8.5 mm ring).



3- LA 9-11 mm
(CEJ between the
8.5 –mm & 11.5-
mm rings).

4- 12 mm or more
(CEJ beyond the
11.5-mm ring).



Examination is done using **CPI**
probe.

